



(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
11.10.2000 Bulletin 2000/41

(51) Int Cl.⁷: **H04B 10/155**, H04B 10/145

(43) Date of publication A2:
06.05.1998 Bulletin 1998/19

(21) Application number: 97307859.5

(22) Date of filing: 06.10.1997

(84) Designated Contracting States:
AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC
NL PT SE

- **Forbes, Duncan John**
Bishops Stortford, Herts CM23 5LT (GB)

(30) Priority: 31.10.1996 US 741587

(74) Representative: **Ryan, John Peter William et al**
Nortel Networks
Intellectual Property Law Group
London Road
Harlow, Essex CM17 9NA (GB)

(71) Applicant: Nortel Networks Limited
Montreal, Quebec H2Y 3Y4 (CA)

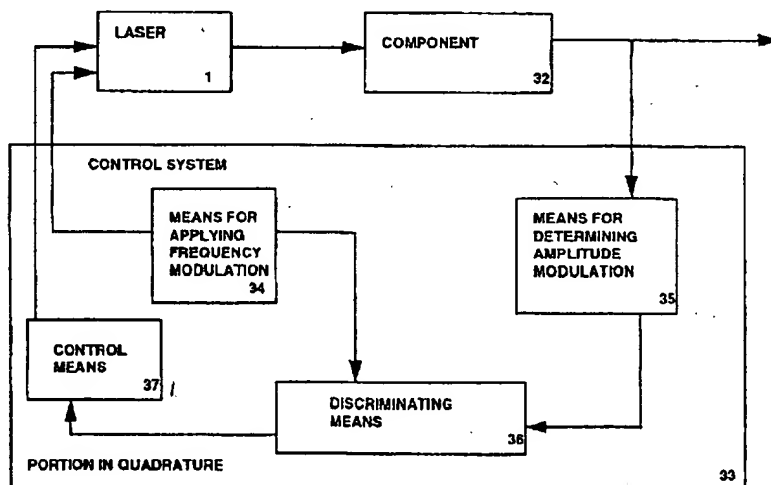
(72) Inventors:
• Epworth, Richard Edward
Sawbridgeworth, Herts CM21 0BD (GB)

(54) **Optical frequency control system**

(57) A control system for controlling the frequency of a laser 1 in an optical transmission system comprises means 34 for applying a frequency modulation to the laser, means 35 for determining an amplitude modulation present in the signal downstream of the laser and attributable to the frequency modulation, and means 36 for discriminating a portion of the amplitude modulation which is substantially in phase quadrature with the ap-

plied frequency modulation, and means 37 for controlling the frequency of the laser on the basis of the discriminated quadrature portion. An optical component downstream of the laser may have a response which converts FM to AM. The response and the frequency output of the laser can be locked to one another, without errors caused by unwanted AM in the transmitted signal modulation frequency.

FIGURE 4





European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 97 30 7859

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	US 5 204 640 A (LOGAN JR RONALD T) 20 April 1993 (1993-04-20)	1-4, 8, 16, 17, 22, 23	H04B10/155 H04B10/145
Y	* column 2, line 39 - line 43 *	6, 7, 10, 11, 20	
A	* column 3, line 27 - line 48 * * column 6, line 41 - line 44 * * figures 38, 4 *	12-14, 18, 19, 21	
Y	US 5 510 922 A (NAITO TAKAO) 23 April 1996 (1996-04-23)	6, 7, 10, 11, 20	
A	* column 3, line 40 - line 52 * * column 5, line 44 - line 50 * * column 8, line 11 - line 27 * * figures 1, 13 *	12-14, 18, 19, 21	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			H04B
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 21 August 2000	Examiner Carrasco Comes, N
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons S : member of the same patent family, corresponding document			

EPO FORM 1503 03/82 (7/04/00)

ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.

EP 97 30 7859

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

21-08-2000

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
US 5204640	A	20-04-1993	NONE		
US 5510922	A	23-04-1996	JP	8015742 A	19-01-1996

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82